ST STEPHEN IN BRANNEL NEIGHBOURHOOD DEVELOPMENT PLAN

ONSHORE WIND ENERGY ASSESSMENT

1. INTRODUCTION.

1.1 National Planning Policy states that wind turbines cannot be granted planning permission unless they are within an area identified in a Development Plan (Local Plan, DPD or Neighbourhood Plan) or replacements for existing turbines[1]. Therefore, if the NDP is to support this technology in accordance with community wishes, it must identify areas as suitable for wind energy development.

1.2 The Cornwall Climate Emergency Development Plan Document [CEDPD] policy map and its interactive mapping site identifies 'broad' areas that are proposed to be taken forward as 'suitable for wind energy' in the CEDPD. It also sets out sets relevant criteria for decision making.

1.3 These 'broad' areas are based on a landscape sensitivity assessment to onshore wind carried out by LUC.

1.4 Based on these the St Stephen in Brannel NDP can identify which the areas of the Parish that the community considers are appropriate locations for certain scale of wind energy, taking into account a wider range of constraints and fine tuning the analysis to local conditions. This process has followed the Centre for Sustainable Energy's Guidance note: ' How to identify suitable areas for onshore wind development in your neighbourhood plan ' https://www.cse.org.uk/downloads/reports-and-publications/community-energy/planning/neighbourhood-planning-wind-guidance.pdf which sets out the following steps.

2. Identifying suitable areas and criteria for onshore wind development.

Step 1 Identifying areas with an adequate wind resource.

2.1 Area wind survey information was used from the UK NOABL (National Oceanic and Atmospheric Administration Boundary Layer) wind speed database produced for the former Department of Trade and Industry, accessed via the RenSMART mapping tool. The database contains estimates of the annual mean wind speed throughout the UK at a height of 10m, 25m and 45m above ground level (agl). The database has a resolution of a 1km grid square with the average wind speed shown in m/s.

2.2 The minimum economic wind speed (i.e. the speed at which a turbine becomes economically viable) used in previous Cornwall Council studies is a level of 5.5m/s at 10m above ground level so this has been used in this assessment ('Renewable-Energy-Resource-Potential'. Cornwall Council March 2013).

2.3 One limitation of the NOABL dataset is its resolution. A 1km square resolution at the normal measurement level of 45m does not allow for variations in local topographical effects and surface roughness. As the wind shear is affected greatly by local topography and the surrounding environment (i.e. trees, walls, buildings etc) it is more appropriate to use the 10m dataset with the known minimum economic wind speed at the same level. Therefore, all

[1] The NPPF 2021 says in its Paragraph 158 that:

'When determining planning applications for renewable and low carbon development, local planning authorities should:

(a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

(b) approve the application if its impacts are (or can be made) acceptable. [Footnote] Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas'.

The Footnote referred to says that:

'Except for applications for the repowering of existing wind turbines, a proposed wind energy development involving one or more turbines should not be considered acceptable unless it is in an area identified as suitable for wind energy development in the development plan; and, following consultation, it can be demonstrated that the planning impacts identified by the affected local community have been fully addressed and the proposal has their backing'.

grid squares with a wind speed below 5.5m/s at 10m height can be discounted as having wind generation potential. Values above 7 would be considered 'good' commercial grade wind site.

2.4 As can be seen from Figure 2, most of the Parish has wind speeds that exceed the minimum economic level, with the lowest at the south west, and the average wind speeds increasing as the landscape rises to the north and east.

Figure 1: Extract from CC Interactive Mapping for the Cornwall Climate Emergency Development Plan Document showing 'Areas broadly suitable for wind energy'

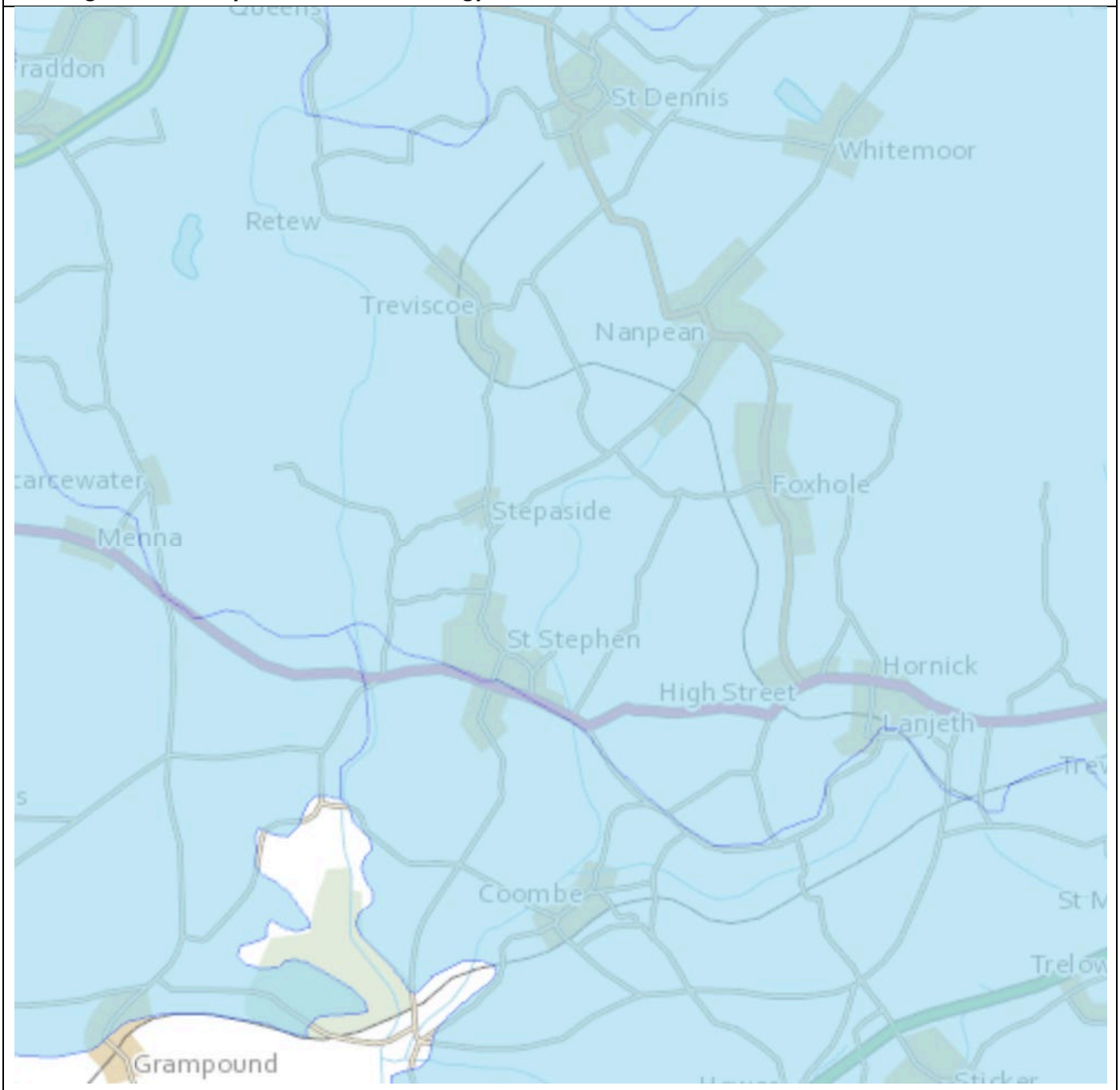
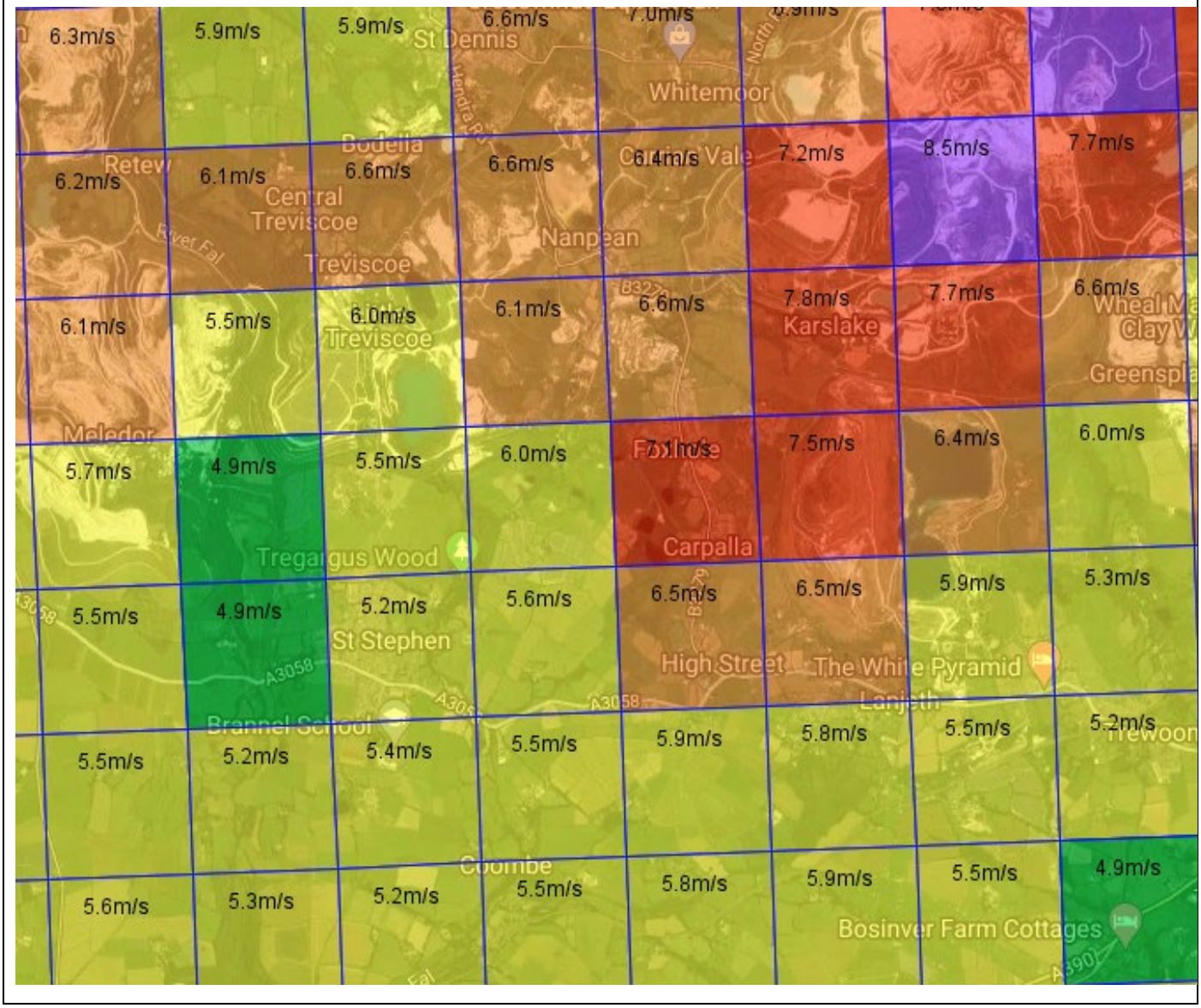


Figure 2: Minimum Economic Wind Speed (5.5 m/s at 10m height) (Source: RENMAPS)

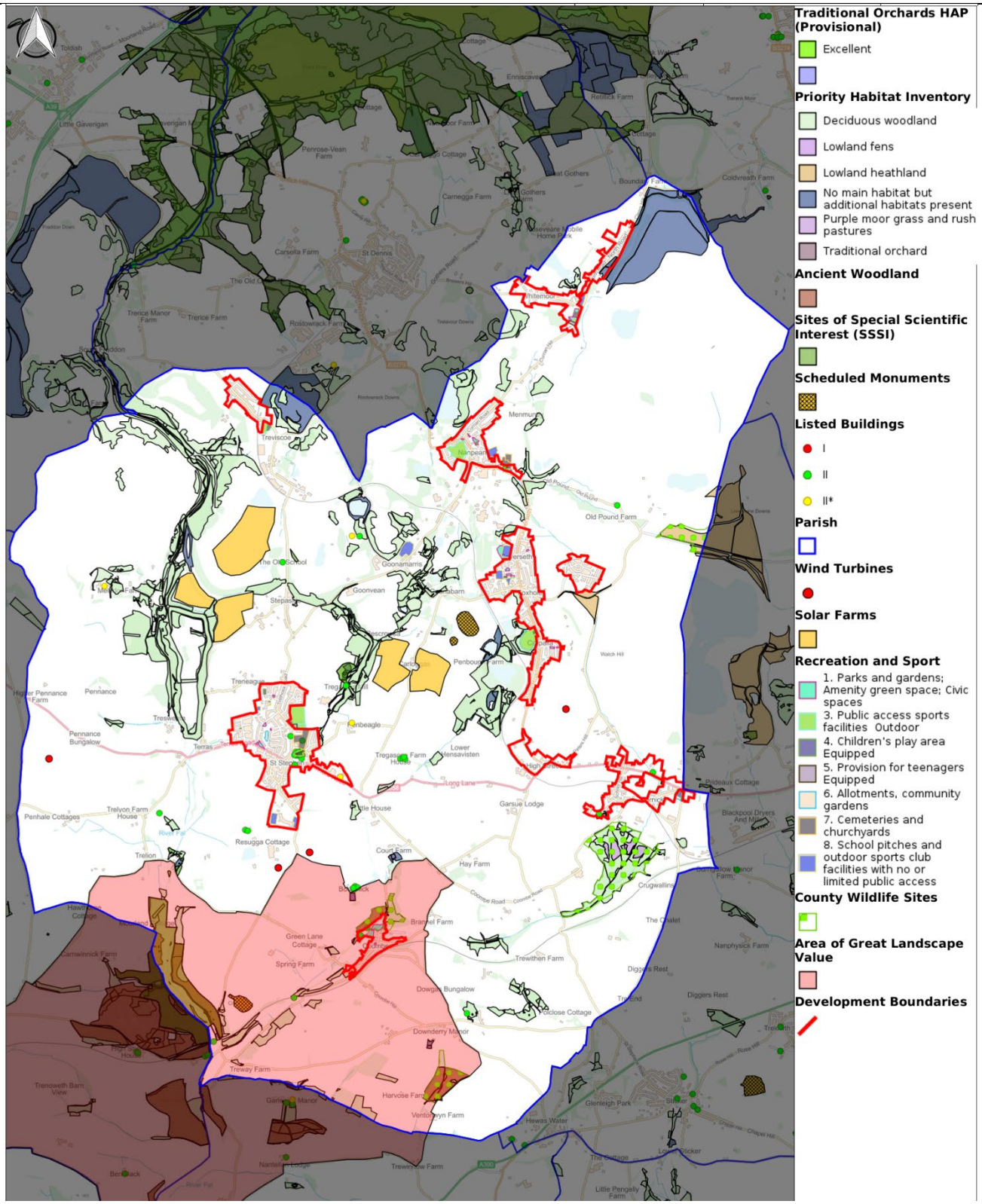


Step 2 Mapping constraints which would prevent a wind turbine from being developed.

2.5 An indicative constraints map has been produced in Figure 3. This was produced using the Cornwall Council Interactive Mapping for Local Councils Tool and the Parish Online GIS app, and indicates a wide range of national and county level constraints, as can be seen from the legend, which would be likely to significantly constrain the development of wind energy proposals. In all cases, coming forward for future consideration within the parish, proposals would be subject to the production of individual impact assessments unless of a scale allowed as permissible development.

2.6 In choosing these constraints we particularly recognised the very special qualities of the parish and made full reference to the adopted Cornwall Renewable Energy Planning Advice Annex 1, Appendix 1 Landscape Sensitivity and Strategy Matrices, and the Cornwall Council height banding and cluster size categorisation [See Figure 5]. This has provided some 'fine tuning' of the 'broad' areas map in drawing suitable boundaries for an area of wind turbine opportunity.

Figure 3: Map of constraints which would prevent a wind turbine from being developed.



3. Detailed Definition of Areas of Search

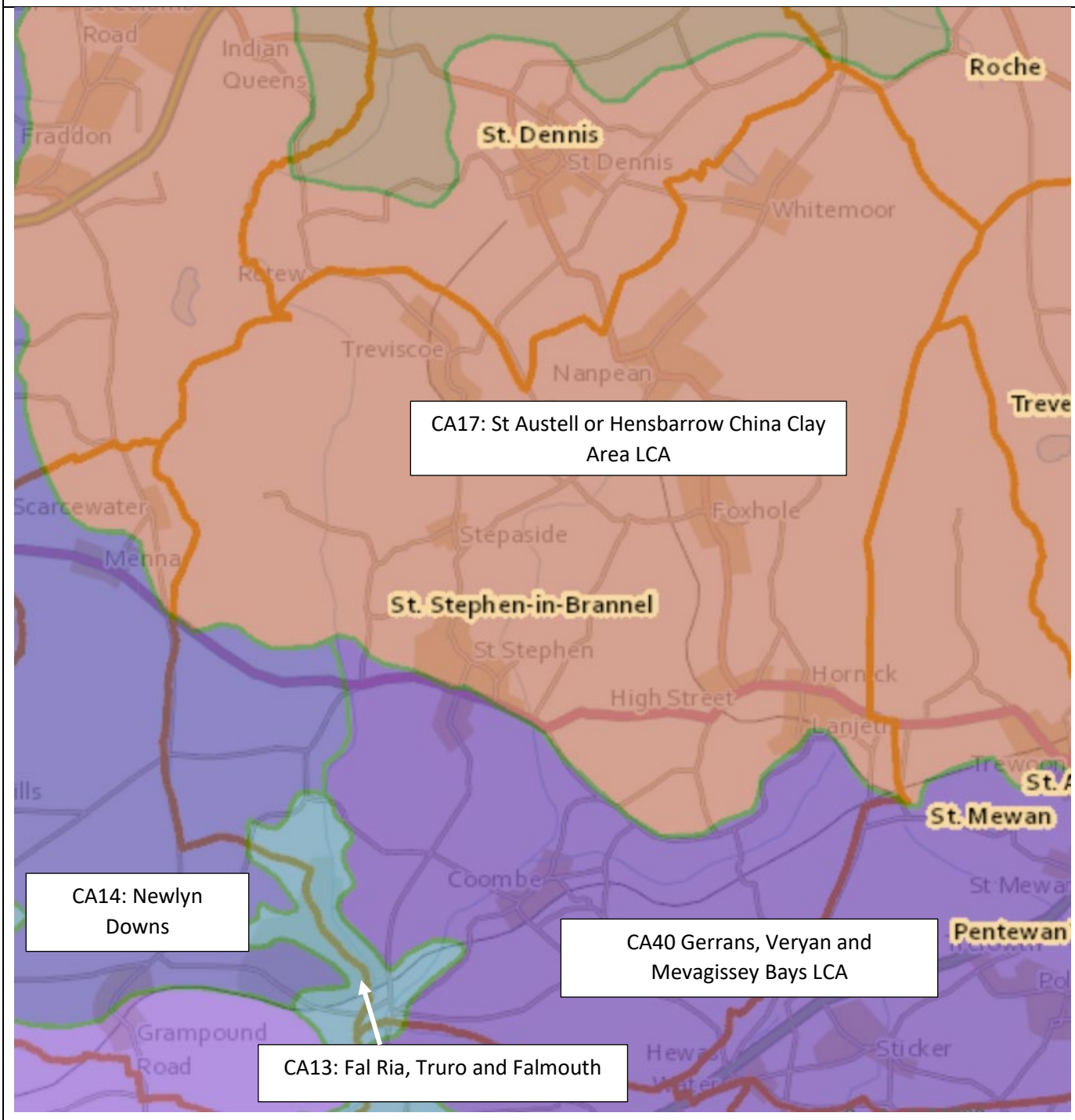
3.1 Using this material and with reference to the detailed analysis of the Landscape Character Units within the Parish given in the Cornwall Renewable Energy Planning Advice Annex 1, Appendix 1 Landscape Sensitivity and Strategy Matrices, it is possible to define the Area of Search.

3.2 The four LCA assessed that ae present in the Parish are:

- CA13: Fal Ria, Truro and Falmouth
- CA14: Newlyn Downs
- CA17: St Austell or Hensbarrow China Clay Area
- CA40 Gerrans, Veryan and Mevagissey Bays

3.3 These are shown in Figure 4 following.

Figure 4: Landscape Character Areas



CA13: Fal Ria, Truro and Falmouth

A very small part of this LCA penetrates the Parish, following the valley of the Fal River, and is within both the Trenoweth and the Fal Valley AGLV. **This LCA is considered to have a moderate sensitivity to wind energy development.**

Landscape Strategy – The landscape strategy is for a landscape with occasional single turbines or small to medium sized clusters of turbines, comprising turbines that may be up to and including Band C with no turbines in the intimate wooded creeks, along undeveloped estuary edges….There may be several wind energy developments in the LCA, but these should be clearly separated so that, although each wind energy development influences the perception of the landscape at close proximity, collectively they do not have a defining influence on the overall experience of the landscape.

Siting Guidance - The siting guidance lists a number of features which contribute particularly to the scenic value of the landscape and how they should be respected. Those relevant to St Stephen in Brannel Parish are:

- Avoid locating turbines in the intimate wooded creeks
- Avoid damage and alterations to the network of winding well-treed minor roads.
- Ensure wind energy development does not dominate, or prevent the understanding and appreciation of, historic landmarks on the skyline [this LCA abuts Resugga Prehistoric Hillfort and the Cornwall Railway Viaduct south of Coombe].
- Consider views from local viewpoints and popular routes when considering the siting and design of wind energy development in the landscape – if development will be visible, aim for a balanced composition.

CA14: Newlyn Downs

A small part of this LCA penetrates the Parish, to the south west of Terras. **This LCA is considered to have low-moderate sensitivity to wind development**

Landscape Strategy – The landscape strategy is for a landscape with wind farms with small or medium clusters of turbines, comprising turbines up to and including the smaller end of Band D, as well as smaller single turbines associated with farm buildings and businesses. There may be several wind energy developments in the LCA and the landscape may be perceived as having wind farms visible in different directions, so that collectively they may have a strong influence on the character of the landscape.

Siting Guidance - The siting guidance lists a number of features which contribute particularly to the scenic value of the landscape and how they should be respected. Those relevant to St Stephen in Brannel Parish are:

- Avoid locating turbines in the most remote and tranquil locations.
- Areas of Medieval Farmland are more sensitive to wind turbines (particularly large scale turbines) than areas of modern or post-medieval fields [That part of the LCA in St Stephen In Brannel is entirely Medieval farmland].
- Consider views of the skyline from the settlements when siting and designing wind development – aim for a balanced composition of turbines [That part of the LCA in St Stephen In Brannel is a short distance below and opposite to St Stephen on rising ground].
- Take into account generic guidance on siting multiple windfarms in this LCA.

CA17: St Austell or Hensbarrow China Clay Area

Almost three quarters of the Parish above St Stephen and Lanjeth are in **this LCA, which has a moderate sensitivity to wind energy development.**

Landscape Strategy – Since this landscape already has a number of landmark features within it, the landscape strategy is for a landscape with occasional wind energy development within the central part of the LCA - comprising small, medium or large clusters of turbines, comprising turbines up to and including Band D (turbine size and cluster size should relate to landscape scale and the sensitivity of its characteristics which vary within the LCA). Whilst each wind energy development influences the perception of the landscape at close proximity, they should not have a defining influence on the overall experience of the landscape.

Siting Guidance - The siting guidance lists a number of features which contribute particularly to the scenic value of the landscape and how they should be respected. Those relevant to St Stephen in Brannel Parish are:

- Locate turbines in the mining landscapes in the centre of the LCA (away from the outward presenting edge of the Clay area) and in the areas of more regular field patterns which tend to occur on higher ground away from the river valleys and older settlements.
- Site turbines away from the outer boundary tips and landforms of the area so that these are retained as distinctive features on the skyline.
- Ensure wind energy development does not dominate, or prevent the understanding and appreciation of, historic landmarks on the skyline, including St Stephen's Beacon.
- Avoid locating the largest scale wind energy development in areas of very small, ancient fields (especially at Goverseth and Carpalla).
- Consider how turbines fit with existing skyline features when siting and designing wind development – turbines may be better sited on the top of flat tips than close to distinctive conical forms, and away from the outward presenting edge of the Clay area.
- Ensure wind energy development does not dominate the huge pale spoil heaps, extensive turquoise lagoons and settling tanks and Hensbarrow Beacon as distinctive features of the landscape.

CA40 Gerrans, Veryan and Mevagissey Bays

The area south of St Stephen and Lanjeth is within this LCA. And partially covers the Fal Valley AGLV **It has a moderate sensitivity to wind energy development.**

Landscape Strategy – The landscape strategy is for a landscape with occasional small clusters of turbines, or single turbines, comprising turbines up to the lower end of Band D (turbine size and cluster size should relate to landscape scale which varies within the LCA). There may be several wind energy developments in the LCA, but these should be clearly separated so that, although each wind energy development influences the perception of the landscape at close proximity, collectively they do not have a defining influence on the overall experience of the landscape.

Siting Guidance - The siting guidance lists a number of features which contribute particularly to the scenic value of the landscape and how they should be respected. Those relevant to St Stephen in Brannel Parish are:

- Avoid siting wind turbines within areas of small-scale historically important medieval stripfield systems.
- Locate any larger turbines in areas of larger post-medieval and modern fields wherever possible; where they would be more easily incorporated into the scale of the landscape.
- Avoid damage and alterations to the network of narrow winding lanes enclosed by steep Cornish hedges.
- Ensure wind energy development does not dominate, or prevent the understanding and appreciation of, historic landmarks on the skyline [this LCA includes Resugga Prehistoric Hillfort and the Cornwall Railway Viaduct south of Coombe].
- Avoid, wherever possible, siting turbines within the HLC Types of 'Rough Ground'
- Protect the factors which contribute to the scenic quality of the Fal Valley AGLV (particularly the inaccessible and 'unspoilt' nature of the valley, the woodland and thick hedgerows… the peaceful character in areas of coppice, and the dramatic viaducts) – ensure choice of site and scale of development does not detract from these.

Figure 5: Turbine Height Banding and Cluster Sizes.

TURBINE HEIGHT BANDING

BAND A TURBINES (APPROX. 18-25 METRES TO TIP, EXCLUDES ROOF MOUNTED TURBINES);

BAND B TURBINES (APPROX. 26-60 METRES TO TIP);

BAND C TURBINES (APPROX. 61-99 METRES TO TIP);

BAND D TURBINES (APPROX. 100-150 METRES TO TIP).

TURBINE CLUSTER SIZES

SINGLE TURBINE

SMALL SCALE CLUSTERS (UP TO 5 TURBINES)

MEDIUM SCALE CLUSTERS (6-10 TURBINES)

LARGE SCALE CLUSTERS (11-25 TURBINES)

VERY LARGE SCALE CLUSTERS (>26 TURBINES)

SOURCE: 'CORNWALL RENEWABLE ENERGY PLANNING ADVICE SPD' MARCH 2016.

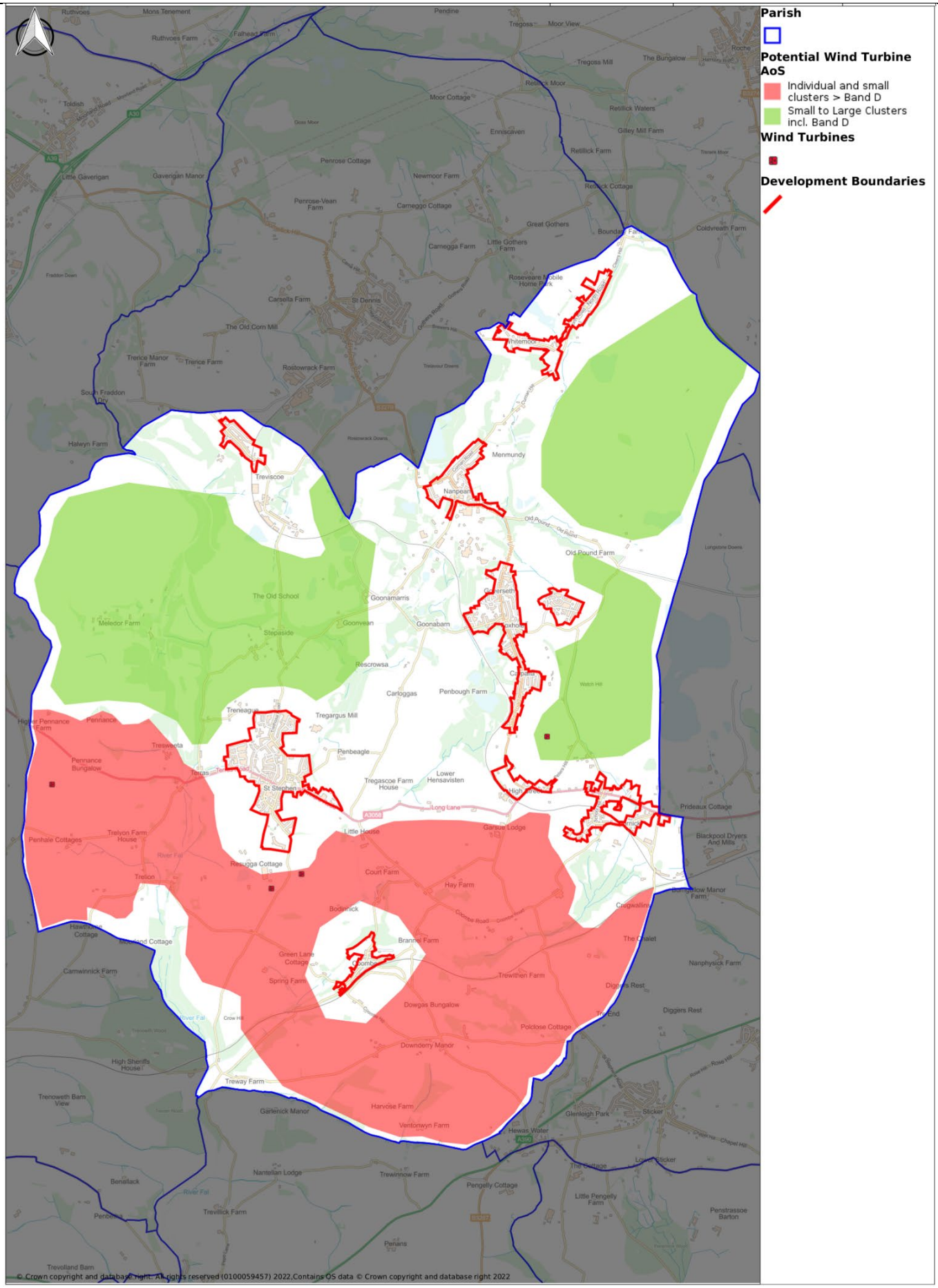
3.4 Also applied is a general setback from settlements and principal roads of at least 200m.

3.5 Taking the identified constraints into account, and also the assessment of sensitivity and siting guidance in the Cornwall Renewable Energy Planning Advice Annex 1, Appendix 1 Landscape Sensitivity and Strategy Matrices, a two level Area of Search has been devised, as illustrated in Figure 6. In the southern area of the Parish, where the constraints are most restrictive, the Area of Search is for individual wind turbines and small clusters of up to and including Band C. In the northern area, which is less constrained and also already heavily modified by industry, the Area of Search is for individual wind turbines and small to large clusters of up to and including Band D.

3.6 It is important to note that falling within the 'broad' area identified by Cornwall Council and refined in the St Stephen in Brannel NDP as Areas of Search does not mean that proposals will automatically be granted planning permission. These are areas within which Cornwall Council as the Local Planning Authority will consider whether turbines should be granted permission in line with National, Cornwall Local Plan, Cornwall Climate Emergency DPD, and Neighbourhood Development Plan policies which set out a series of technical tests (including distances from homes and heritage assets including Scheduled monuments and listed buildings, potential impact on habitat and species, and demonstration of the acceptability of their visual impact). This sits alongside other policy requirements including those for Statements of Heritage Significance and Heritage Impact Assessments where relevant.

3.7 The draft 'Areas of Search' are shown in Figure 6 following.

Figure 6: Proposed St Stephen in Brannel NDP Wind Energy 'Areas of Search'



3.8 Proposed Policy. The NDP Policy proposed is as follows:

Policy NE6 – Sustainable Energy Production

1. Proposals for sustainable energy generation and distribution networks will be supported if:

   a. They contribute to meeting Cornwall's target of 100% renewable electricity supply by 2030; and

   b. They will not result in significant adverse impacts on the local environment that cannot be satisfactorily mitigated, including cumulative landscape and visual impacts, impacts on the significance of heritage assets including their settings, and wider landscape, villagescape and townscape character, which must be conserved or enhanced; and

   c. The use allows, where appropriate to the form of development, for the continuation of the site for some form of agricultural activity proportionate to the scale of the proposal; and

   d. It provides for 10% biodiversity net gain in accordance with NDP Policy XX

   e. It provides for a community benefit in terms of profit sharing or proportion of community ownership and delivers local social and community benefits.

   f. It is a commercial led energy schemes with a capacity over 5MW, it provides an option to communities to own at least 5% of the scheme; and

   g. There are appropriate plans and a mechanism in place for the removal of the technology on cessation of generation, and restoration of the site to its original use or an acceptable alternative use.

2. Proposals for the co-location of energy producers and energy users that achieve benefits in terms of energy independence and reduced off-site environmental impacts will be supported.

3. Proposals for community owned renewable energy schemes will be supported where they are integrated into the local grid or by other means so that the energy generated can be supplied directly to domestic, business and other buildings in the parish, demonstrated by direct reduction to buildings' energy consumption.

[NOTE: On adoption of the Cornwall Climate Emergency Development Plan Document, part 1 of this policy may be supreceded].

4. IN ADDITION, the following criteria will be used to assess support for each of the specific generation types:

WIND ENERGY DEVELOPMENT

   a. Wind energy development proposals will be supported if:
   b. They are located in the Red Wind Energy Area of Search as shown on the Proposals Map and comprise individual wind turbines and small clusters of up to and including Band C; OR

   c. They are located in the Green Wind Energy Area of Search as shown on the Proposals Map and comprise individual turbines and small to large clusters of up to and including Band D; and

   d. Demonstrate that, following consultation, the planning impacts identified by the affected local community have been fully addressed by the proposal; and

   e. Potential harmful impacts on the following are appropriately avoided or mitigated:

      i. Residential amenity through noise generation, shadow flicker, noise or overbearing / overshadowing impact; and

      ii. Safety of highways and public rights of way.

      iii. Adverse impact on air traffic operations, radar and air navigational installations

f. They would not dominate, or prevent the understanding and appreciation of historic landmarks, heritage assets, or the views of the distinctive tips, lagoons and landforms associated with Hensbarrow mining area, or the rising ground above the settlements;

Outside the wind energy development Areas of Search, Development proposals involving one or more turbines will not be supported

SOLAR PHOTO VOLTAIC [PV]

B. Solar energy development proposals will be supported if:

a. They are focussed on previously developed land and away from best and most versatile agricultural land; and do not breach any predominantly small medieval field patterns;

b. They are of a siting, scale and design that would not compromise public safety and allows continued safe use of public rights of way;

c. They would not adversely affect the amenities of local residents or other users of the countryside in terms of noise or overbearing visual impact;

d. They would not dominate, or prevent the understanding and appreciation of historic landmarks, heritage assets, or views.

e. Their location is clearly separated from existing PV sites, so that collectively they do not have a defining influence on the overall experience of the landscape.

HYDRO POWER

C. Proposals to harness the power of rivers for the purpose of generating power will be supported, if:

a. Any associated buildings are small scale and designed to hide within the landscape (bunding or through design that reflect local built vernacular)

b. Adequate provision is incorporated to ensure unobstructed passage for fish and other riverine wildlife

c. Any impoundments (weirs or dams) do not aggravate flooding issues and are designed to maximise biodiversity benefit.

d. It would not dominate, or prevent the understanding and appreciation of historic landmarks and heritage assets.

DEEP GEOTHERMAL

D. Deep geothermal energy development proposals will be supported if:

a. Drilling rigs, plant and machinery would not dominate, or prevent the understanding and appreciation of historic landmarks, heritage assets, views, or rising ground above the settlements; and

b. Would not adversely affect the amenities of local residents or other users of the countryside in terms of noise, vibration, traffic generation or overbearing visual impact;

c. In the case of historic mining sites, the layout and use of buildings is informed by a detailed Heritage Impact Assessment; and

d. Wherever possible, the opportunity is taken to re-use existing mine buildings and remedialise despoiled ground;

e. Appropriate ecological surveys are undertaken and adequate mitigation of any effects is proposed;

f. The risks of induced seismicity are assessed as being acceptable, and a procedure for monitoring during the life of the plant is agreed with the local planning authority

OVERALL

Reference should be made to the ‘Landscape strategy and siting guidance’ given in Cornwall Council’s Landscape Sensitivity and Strategy Matrices for each Landscape Character Area. March 2016

ENDS